Company Profile

Stockholder Companies & Technical Collaboration Contractor Companies

Stockholder Companies	Technical Collaboration Contractor C
• Toyota Industries Corporation	• Kanto Auto Works, Ltd.
• Toyota Motor Corporation	• Toyoda Gosei Co., Ltd.
• Aichi Steel Corporation	Other 38 Companies
• JTEKT Corporation	
• Toyota Auto Body Co., Ltd.	
• Toyota Tsusho Corporation	
• Aisin Seiki Co., Ltd.	
• Denso Corporation	
• Toyota Boshoku Corporation	

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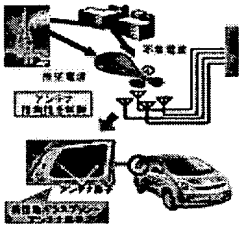
Technology

- Research Activities
- Energy/Environment
- Safety/Human Engineering
- Mechanical Engineering
- System Engineering/ Electronics
- Materials

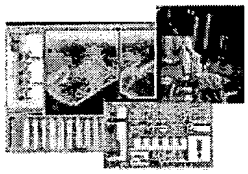
System Engineering & Electronics

Newest Technology



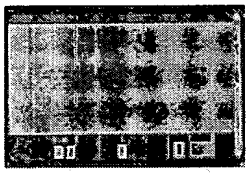
Adaptive Reception Technique for Interference Cancella

We developed the mobile reception system for terrestrial bro
In order to receive only the desired radio wave, the directiona
antennas is controlled adaptively.
(Partial joint research with Toyota Motor Corporation)



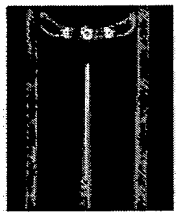
Mill Plan: Planning Software for the Machining of Mold

We have promoted the automation of CAM (Computer Aidec
Manufacturing) by finding the most efficient mold and die m
process using automated computer planning.



Insulated Gate Bipolar Transistor for Hybrid Vehicles (I

We developed the "IGBT-Insulated Gate Bipolar Transistor",
semiconductor power device technology.
This device was used for "Prius", the world's first mass-prod
vehicle.



Self-Formation of Three-Dimensional Optical Circuit

We have developed a low-cost production technology for an
interconnecting circuits that does not require a lens or a preci
positioning process.
Using this technology, we are also working toward long-dist
communications of 100 meters or more utilizing an LED ligh
(Joint research with Toyoda Gosei Co., LTD)

Self-Formation of Three-Dimensional Optical Circuit

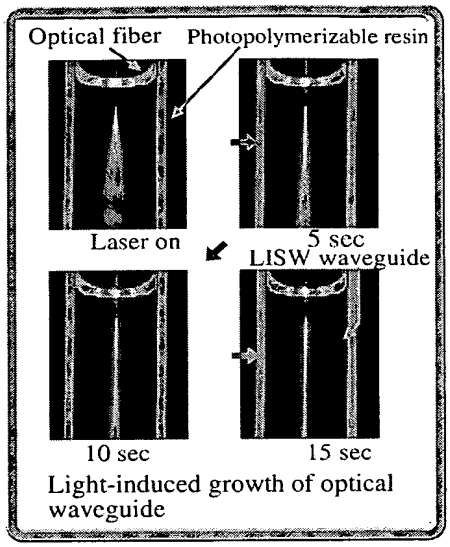
Aim

To develop a low-cost production technology for an optical interconnecting circuits that does not require a lens or a precision positioning process. Using this technology, we are also working toward long-distance communications of 100 meters or more utilizing an LED light source.

Principle

Using the outgoing light from the optical fiber to polymerize the photopolymerizable resin, utilize a phenomenon* which automatically forms the three-dimensional optical circuit (waveguide).

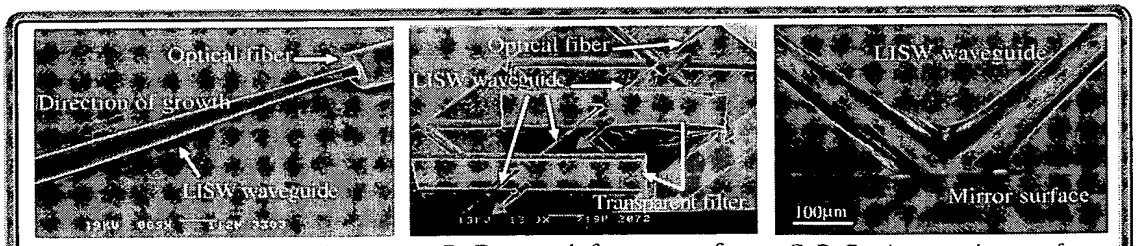
* Light-Induced Self-Written (LISW) waveguide



Light-induced growth of optical waveguide

Characteristics

- Three-dimensional growth is possible using various filters and/or mirrors
- Passive alignment made possible through integrated forming with casing
- Low propagation loss (<1.0 dB/cm)
- Applicable to wide range of optical fiber diameters (50-1000 μm)



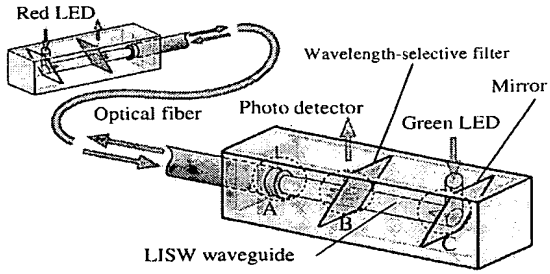
A. Taper portion of optical fiber

B. Regrowth from rear of transparent filter

C. Reflection on mirror surface

Application

- Two-way optical communication by single fiber
- Wavelength-multiplexing optical communication
- Optical networks in automobiles and homes
- High speed optical networks in offices and factories



Application of LISW waveguide for two-way (full-duplex) optical communications by single fiber

● Joint research with Toyota Gosei Co..LTD

TOYOTA CENTRAL R&D LABS., INC.